MAUL FOSTER ALONGI

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October 10, 2011
Project No. 8128.01.08

Mr. Dana Bayuk
Oregon Department of Environmental Quality
2020 SW 4th Avenue
Portland, Oregon 97201-4987

Re: Monthly Progress Report—September 2011
Siltronic Corporation
7200 NW Front Avenue, Portland, OR
ECSI #183

Dear Dana:

Maul Foster & Alongi, Inc. (MFA) has prepared this progress report (Report) in accordance with the requirements of the *Order Requiring Remedial Investigation (RI) and Source Control Measures* (the Order), Oregon Department of Environmental Quality (DEQ) No. VC-NWR-03-16, issued to Siltronic Corporation (Siltronic) on February 9, 2004. The reporting period for this Report is September 1, 2011, through September 30, 2011. The next report is due November 10, 2011.

The report organization follows that of the previous progress reports.

ACTIONS TAKEN UNDER THE ORDER SINCE THE PREVIOUS PROGRESS REPORT

Communications

On September 9, 2011, MFA submitted a memorandum evaluating the predicted operational lifetime of the zero-valent iron (ZVI) component of EHC. This evaluation was requested by DEQ during a meeting between DEQ and Siltronic and its representatives on May 23, 2011. The results of the evaluation indicated that the operational lifetime of the ZVI is conservatively estimated to be between 10 and 21 years. As noted in the previous monthly progress report, the data in the memo also indicated that the concentration of TCE in source area groundwater has been reduced by 99.9 to 99.999 per cent since implementation was completed in July 2009.

On September 22, 2011, DEQ copied Siltronic and MFA on comments regarding the Draft Groundwater Source Control Final Design Report, prepared by AnchorQEA LLC on behalf of NW Natural. On September 30, 2011, MFA submitted a letter on behalf of Siltronic that discussed several issues related to DEQ's comments that have significant potential to adversely impact Siltronic's business interests.

Fieldwork

The soil vapor mitigation system was installed in September.

Group 3 PMW monitoring continued through September. Performance monitoring in the supplemental injection zone continued through September.

Monthly water levels were collected on September 16, 2011. The monthly water levels are included in the attached MS Excel file.[1]

Measurements of dense, non-aqueous phase liquid (DNAPL) from former manufactured gas plant (MGP) operations were collected in selected Group 1 and 2 PMWs between September 16 and 30, 2011. MGP DNAPL was measured in the following PMWs using an interface probe:

- WS-33-81: thickness 0.95 ft., measured on September 22.
- WS-43-36: thickness 9.34 ft., measured on September 22.
- WS-15-85: thickness 5.3 ft., measured on September 30.

Samples of MGP DNAPL were collected and submitted for analysis.

Actions to Be Taken in the Next Two Months

Groundwater elevations and DNAPL screening will be collected in October and November. Performance monitoring in the Group 1, 2, and 3 wells will continue in October.

Soil vapor sampling will continue in October.

TEST RESULTS AND DATA RECEIVED SINCE THE PREVIOUS PROGRESS REPORT

Data through the September 2011 sampling events has been received but validation is not yet complete. Consistent with DEQ comments, the content and format of data submittal memoranda evaluating these data will be developed following DEQ review of the updated and revised PMP. The attached (electronic only) MS Excel data file contains all PMW and quarterly monitoring data received through the end of the reporting period (September 30, 2011).

[1] Includes monthly water levels from January-August 2011; water levels from preceding years have previously been submitted.

RAO 1 for the source area has been met in all of the Group 1 and 2 PMWs. The concentration of TCE in monitoring well WS-13-69, which prior to injections was typically in the 100,000 – 200,000 ug/L range, was 27.7 ug/L in August 2011.

Data from the supplemental injection zone wells has also been received. Data from April, June, and August are included in the attached MS Excel sheet. The data indicate the following:

- The fill zone wells located in the street and downgradient (WS-40-36, WS-41-36, and WS-42-36) are below the TCE injection threshold.

- Effects of EHC injections (e.g., presence of ketones) are observed in WS-40-36 and WS-41-36. These wells are located within or adjacent to the 2009 full-scale injection areas.

- In the fill zone, only WS-43-36 (located on the south side of the street) is above the injection threshold.

- TCE, cis-1,2-DCE, and chloride concentrations show degradation occurring in the alluvial zone (WS-41-91). Sulfate is decreasing, indicating reducing conditions.

- Distribution of EHC in the alluvial zone (WS-41-91) has been confirmed by increasing concentrations of iron, but fermentation byproducts (e.g. ketones) are not observed yet.

These data are favorable and suggest that the EHC and KB-1 amendments are performing as anticipated.

PROBLEMS EXPERIENCED SINCE THE PREVIOUS PROGRESS REPORT

No additional problems were experienced.

Please call either of us at (971) 544-2139 if you have questions or comments.

Sincerely,

Maul Foster & Alongi, Inc.

James G.D. Peale, RG
Senior Hydrogeologist

Ted Wall, PE
Principal Engineer

Attachments: Groundwater Data Received through Reporting Period and Water Level Data—MS Excel file (electronic only)

cc: Tom McCue, Siltronic Corporation
Alan Gladstone, Davis Rothwell Earle and Xochihua
Chris Reive, Jordan Schrader Ramis
Jim Anderson, DEQ
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